NGF

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The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: National Green Fuels' Petition for Reconsideration of Final Rule, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

Dear Administrator McCarthy:

Pursuant to Section 307(d)(7)(B) of the Clean Air Act ("CAA"), National Green Fuels LLC ("NGF") petitions the Administrator of the Environmental Protection Agency ("EPA") to reconsider the final rule captioned above (the "Final Rule").[1] The grounds for the objections raised in this petition arose after the period for public comment, and are of central relevance to the outcome of the rule. The Administrator should therefore convene a proceeding for reconsideration of the rule.[2]

NGF objects to EPA's decision, in the Final Rule, not to mandate diversion of organic wastes from landfills subject to the Emission Guidelines, not to provide any direct incentives for such organics diversion, and most importantly not to give states, in devising plans for the implementation of the emission guidelines, the flexibility to include or incentivize organics diversion as a means of compliance flexibility (as opposed to including organics diversion as an additional regulatory requirement, above and beyond the emission guidelines set by EPA).

As discussed below, NGF has a viable technology and business plan that could substantially increase the capacity for processing of organic municipal solid waste ("MSW") in the United States, overcoming one of the "significant barriers" EPA identified to allowing for organics diversion under the Final Rule. A project such as NGF's can recover the energy value of diverted materials that would otherwise be lost when those materials are landfilled, and produce mixed alcohol fuels to help meet our country's urgent demand for new sources of clean renewable fuels. Amending the Final Rule to allow states to properly incentivize such projects as

[1] 81 Fed. Reg. 59,276 (Aug. 29, 2016).
[2] Clean Air Act § 307(d)(7)(B).

part of valid state plans for implementing the Emission Guidelines would not only create substantial environmental benefits by avoiding landfill methane emissions and reducing emissions from transportation fuels, but would have the added benefit of facilitating the production of large volumes of clean renewable fuels, leading to even greater greenhouse gas reductions.

I. Background

The purpose of the Final Rule is to update the Emission Guidelines for methane emissions from existing municipal solid waste landfills originally set by EPA in 1996. The update to the Emission Guidelines and to the New Source Performance Standards ("NSPS") for landfills is an important part of President Obama's Action Plan Strategy to Reduce Methane Emissions, which EPA has identified as an important contributor to global climate change. The Emission Guidelines are also a key element of the recent joint agreement between the United States, Canada, and Mexico to reduce methane emissions from landfills.

The central requirement of the 1996 Emission Guidelines and the 2016 update is the requirement that certain landfills install and operate landfill gas collection and control system ("GCCS"). However, in its 2014 Advance Notice of Proposed Rule Making for the revised Emission Guidelines ("ANPRM"), EPA acknowledged that methane emissions from solid waste landfills could also be substantially reduced by diverting organic waste from landfills, and that there is substantial room for improvement in the amount of organic material diverted from waste streams in the United States.[3] In the ANPRM, EPA solicited "input and ideas for encouraging organic waste diversion under the revised emission guidelines," including providing rule exemptions for landfills that accomplish 100% organics diversion.[4]

In the proposed rule for the revised Emission Guidelines, EPA stated its view that "organics diversion and source separation [are] advantageous because such practices reduce the amount of LFG generated and, thus, may serve as a useful compliance tool as it may allow landfill owners or operators to postpone the need to install a GCCS."[5] EPA did not propose to mandate organics diversion, however, but proposed only two specific "compliance flexibilities" to "encourage wider adoption of organics diversion and GCCS Best Management Practices (BMPs) for emission reductions at landfills."[6] EPA noted that several commenters on the ANPRM had called for rules to encourage partial organics diversion programs.[7]

Other commenters argued that EPA should provide states the flexibility to incorporate both source control requirements and landfill diversion programs into their state plans. EPA noted that at least 21 states have already either mandated organics diversion or banned certain organics from being landfilled. EPA also noted rapid growth in the number of municipalities that have implemented separate food waste collection. EPA finally estimated that aggressive organics diversion programs could achieve up to 18.5% reductions in the generation of LFG.[8]

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[3] 79 Fed. Reg. 41772, 41787 (July 17, 2014).
[4] *Id.* at 41788.
[5] 80 Fed. Reg. 52,100, 52,115.
[6] 80 Fed. Reg. 52103. Many commenters claimed that this number was unreasonably low.
[7] 80 Fed. Reg. 52116.

Nevertheless, EPA declined to include any organics diversion mandate in either the proposed Emission Guidelines or the revised landfill NSPS issued the same day.[9] EPA cited the following barriers to implementing a federal diversion mandate: (1) lack of regulations and incentives at the state and local level; (2) limited processing and transfer capacity for organic wastes; (3) low cost to dispose of waste in landfills relative to other waste treatment technologies; (4) multifaceted and regional nature of the solid waste management industry; and (5) behavioral changes needed among waste generators to divert their organic wastes from landfills.[10]

In the proposed rule, EPA sought comment on other compliance flexibilities EPA should consider when issuing the final Emission Guidelines to encourage more organics diversion; other ways EPA could structure the guidelines to credit organics diversion; and what, if any, role organics diversion policies or measures could play in an approvable state plan.[11] EPA recognized the strong policy interest in "supporting state organics diversion initiatives," including by providing flexibility to include such initiatives as a component of an approvable state plan for compliance with the Emission Guidelines.[12] Numerous parties submitted comments regarding the emission benefits of organics diversion. Some commenters strenuously objected to EPA's refusal to mandate organics diversion in the Emission Guidelines or NSPS.

In the Final Rule, EPA declined to include either an organics diversion mandate or *any* direct incentives for states or regulated entities to conduct organics diversion.[13] Although EPA noted in the Response to Comments on the Final Rule that "In theory, an effective organics diversion program could prevent emissions of landfill gas at a particular landfill from ever exceeding" the emission threshold for applicability of the requirements of the rule, EPA also acknowledged that is only an "indirect" incentive to organics diversion.[14] Indeed, whatever incentive exists is simply the by-product of there being an applicability threshold for the rule that is based on estimated emissions.

The Final Rule also does not provide any guidance to states on compliance flexibilities to incentivize organics diversion. EPA claims in the Response to Comments that states are free to include source diversion incentives in their state plans for implementation of the Emission Guidelines. However, the agency also states that any such requirements must be *additional* to the GCCS installation requirements and level of control set forth in the emission guidelines.[15] The emission guidelines themselves are very proscriptive with regard to state plan requirements

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[8] *Id.*
[9] Standards of Performance for Municipal Solid Waste Landfills; Final Rule, 81 Fed. Reg. 59,332 (Aug. 29, 2016).
[10] 80 Fed. Reg. 52116.
[11] *Id.*
[12] *Id.*
[13] *See* Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills: Proposed Rules (July 2016) ("Response to Comments") at 107 ("the final rule provisions do not directly encourage organic waste diversion as they are focused on the landfill as the emission source instead of the entire waste management system.").
[14] *Id.* at 52-55, 80.
[15] *Id.* at 55.

and do not provide any flexibility for states to use organics diversion as an alternative means of compliance. So states plans may include organics diversion requirements that go above and beyond the requirements of the emission guidelines—as states would of course be free to do even in the absence of the emission guidelines—the rule provides no avenue for states to use organics diversion to help sources comply with the methane reduction requirements mandated by EPA. In short, the Final Rule includes no provisions that are specifically intended to require, incentivize, or otherwise encourage the diversion of organic wastes from landfills.

In declining to include an organics diversion mandate EPA cited the same "significant barriers" to organics diversion it noted in the proposed rule, namely, the complexity and local nature of waste management; limited processing and transfer capacity for organic wastes; the multifaceted and regional nature of the solid waste management industry; and behavioral changes needed among waste generators to divert their organic wastes from landfills.[16] Neither the Final Rule nor the Response to Comments provides a separate explanation for why EPA declined to include or even allow for compliance flexibilities based on organics diversion.

II. NGF's project and technology

NGF has developed a system of biomass separation at landfill sites and the transportation of that material to the highest tech combination of biomass processing, to a proven gasification technology, and the resultant syngas converted to mixed alcohols which had already been approved as an alternative fuel for mixture with gasoline in the EPA letter of February, 1998. The conclusion of the high tech system has been engineered by Fluor Enterprises and a second international and experienced technologically advanced MSW separation and processing company, Shanks Municipal Solutions. NGF's three step technology package is based on proven and reliable processing technologies and techniques, all of the high energy producing materials including organics and food waste materials in MSW (MSW biomass) being disposed of in landfills today, a high energy alternative clean fuel (120 BTUs per gallon and high octane of 120 mixed alcohols) called for in the Energy Policy Act of 2005.

Aside from the elimination of methane emissions achieved through the diversion and processing of MSW-biomass, this program addresses the requirement for higher octane fuels by the automobile manufacturers, as stated in Exhibit A and additional life cycle reductions over corn ethanol are achieved. As noted in Exhibit A, Ford Motor Company reviewed the benefits of high octane and high ethanol fuels and determined the higher ethanol content (and thus lower energy content of the fuel) will create performance related issues such as loss of power and an increase in fuel consumption in vehicles, currently being manufactured along with those manufactured over the past 10 to 15 years. In addition to the issues raised by automobile manufacturers, the processing of MSW and the production of an alternative transportation fuel will have additional emission related reductions when compared to a lifecycle assessment of the production of corn ethanol, since in the production of corn ethanol, additional CO_2 emissions, such as the emissions generated through the farming, insecticide application and transportation to

[16] *Id.* at 61. The Response to Comments cites the same litany of "barriers" to organics diversion in response to dozens of comments addressing various aspects of organics diversion, without actually addressing the issues raised in each individual comment. *Id.* at 46-86.

the processing facility, must be considered. Whereas, such emission considerations are not required, since there is no additional requirement for the diversion of MSW, cities, jurisdictions, counties and authorities will simply collect their MSW as they are currently doing and direct the collection vehicles to an MSW biomass production facility located close to their current landfill or disposal facility.

One important aspect of the NGF's proposed business model is a "hub and spoke" organizational model, under which gasification is conducted at a large centralized facility but MSW processing and organics separation is conducted at decentralized locations, which may or may not be collocated with MSW landfills. Each proposed gasification facility would include three to five gasifier / mixed alcohol trains, with a total processing capacity of approximately 500,000 tons of organic waste per year (final module configuration would be determined by throughput sizing. Diversion of this amount of organic waste would result in the avoidance of (uncontrolled) methane emissions of approximately 3,000,000 short tons of CO2-equivalent emissions / year. Furthermore, the fuels produced by the facility, when blended with gasoline approximately 338,785 tons of CO2 emissions, would be avoided annually.

Construction of the facility(ies) proposed by NGF would involve substantial capital costs, of approximately $700,000 million per facility. Although the proposed project could generate several revenue streams, including the sale of renewable fuels, generation of Renewable Identification Numbers ("RINs") under the Renewable Fuels Standard, and/or tipping fees, these revenues are insufficient to finance the project. However, under an appropriate regulatory structure that allowed organics diversion to help ease the compliance burdens for other regulated entities, the NGF project could potentially generate additional revenue streams to make the project financeable and allow this environmentally beneficial technology to be more widely deployed. Such a structure could include tradable compliance credits for landfills that divert some portion of their waste streams to a mixed fuels production facility, or the ability to generate emission reduction credits under other programs (such as the Clean Power Plan) via processing of organic wastes in a fuels production facility.

The United States deposits in excess of 250 million tons of solid waste in landfills. When properly diverted, using the NGF system and technology package and similar technologies, and produced over 15 billion gallons of alternative fuel. The use of the diverted MSW-biomass, as a feedstock, does not have to be offset as crop feedstocks.

III. EPA should reconsider its decision not to include incentives for landfill diversion in state plans.

In light of the information NGF has provided about its technology and its impact on the prospects for organics diversion in the United States, EPA should reconsider its decision not to include any direct incentives or requirements for organics diversion in the final Emission Guidelines. Such compliance incentives could include carbon offsets or credits based on the diversion of organics from landfills.

A. NGF's information bears on issues that were central to EPA's decision regarding organics diversion in the final Emission Guidelines.

The issue of organics diversion is of central relevance to the question of what controls are appropriate for methane emissions from landfills, and the degree to which EPA should allow or encourage states to incentivize organics diversion. NGF agrees with the comments of Sierra Club, Covanta, the Center for Biological Diversity, and others making the case that organics diversion is a proven strategy for reducing methane emissions from landfills, and that very significant reductions in landfill methane emissions can be achieved by organics diversion.

In addition, the information NGF has provided about its technology and proposed plan for diverting and processing organic MSW bears directly on one of the "significant barriers" to organics diversion that EPA cited in the Emission Guidelines as a reason for not mandating or providing additional incentives for diversion. EPA claimed in the Response to Comments in support of the final Emission Guidelines that "commenters [did] not provide any critique of the 'significant barriers' to including organics diversion as a component of BSER identified by EPA in the preamble [to the proposed rule] . . . and have not demonstrated that these barriers would not prevent organics diversion and source separation from being considered part of BSER."[17] Information about NGF's technology specifically addresses EPA's claims regarding the "limited processing and transfer capacity for organic wastes" available in the United States, and demonstrates that significant additional capacity would be readily deployable given proper incentives.[18]

As stated above, each facility proposed by NGF would have an annual capacity of approximately 500,000 tons of organic waste per year. Widespread deployment of such facilities would significantly increase the United States' capacity to transfer and process organic wastes, while generating very significant quantities of renewable fuels for use in the transportation sector. The environmental co-benefits of this system are an important factor EPA should also take into account in considering the appropriateness of mandating or incentivizing organics diversion.

B. It would have been impractical for NGF to have raised its objection during the comment period on the proposed rule.

NGF could not have brought its information to the attention of EPA during the comment period on the proposed Emission Guidelines, which ended on October 26, 2015. Although the basic technologies on which NGF's project relies have been available and online for several years, NGF and its engineering consultants did not develop the particular configuration for conversion of MSW to mixed alcohols, and NGF's "hub and spoke" plan for MSW processing, gasification and conversion facilities, until late 2015. Consequently, it would have been impractical for NGF to have raised its particular objection to EPA's decisions during the comment period.

IV. CONCLUSION

[17] Response to Comments at 63.
[18] *Id.* at 61.

As acknowledged by EPA and emphasized by many of the commenters on the Final Rule, diversion of organic wastes could result in very significant reductions in the emission of methane, a powerful greenhouse gas, from landfills. This presents a valuable opportunity to create or encourage policies that will both benefit the energy and transportation industries, and also create substantial environmental benefits.

The information NGF has presented here demonstrates that there are viable technologies and strategies for the large-scale conversion of MSW organics to clean transportation fuels. Giving states the flexibility to incentivize such projects under the Emission Guidelines would result in reductions of methane emissions that go far beyond those proposed under the Final Rule, while allowing the production of large volumes of clean renewable fuels at no additional costs to taxpayers. Given this new information concerning a way to increase the processing and transfer capacity for organic wastes in the United States, EPA should reconsider its decision not to provide any incentives or compliance flexibilities for organics diversion, or to allow such flexibilities in state plans.

Sincerely,

James J. Wilson

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Chairman and Chief Executive Officer
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